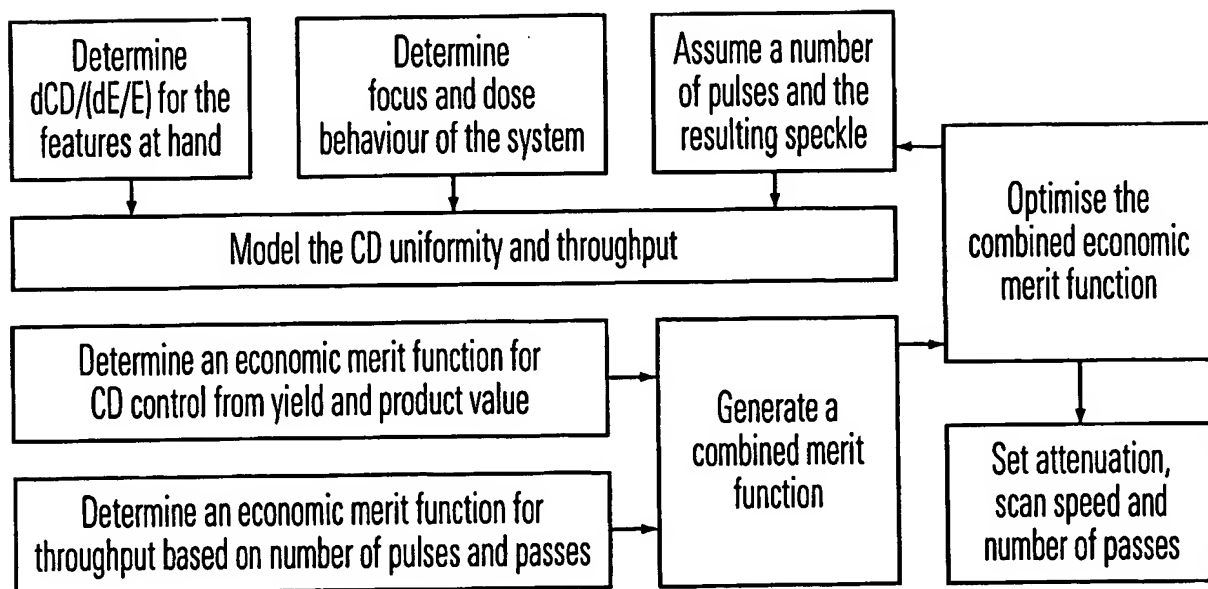


Illumination field with speckle seen through a mask with:
 a. transistor gate structures
 b. contact holes
 (conceptual image)

FIG. 1



Procedure for optimizing the economics for a particular layer.

FIG. 2

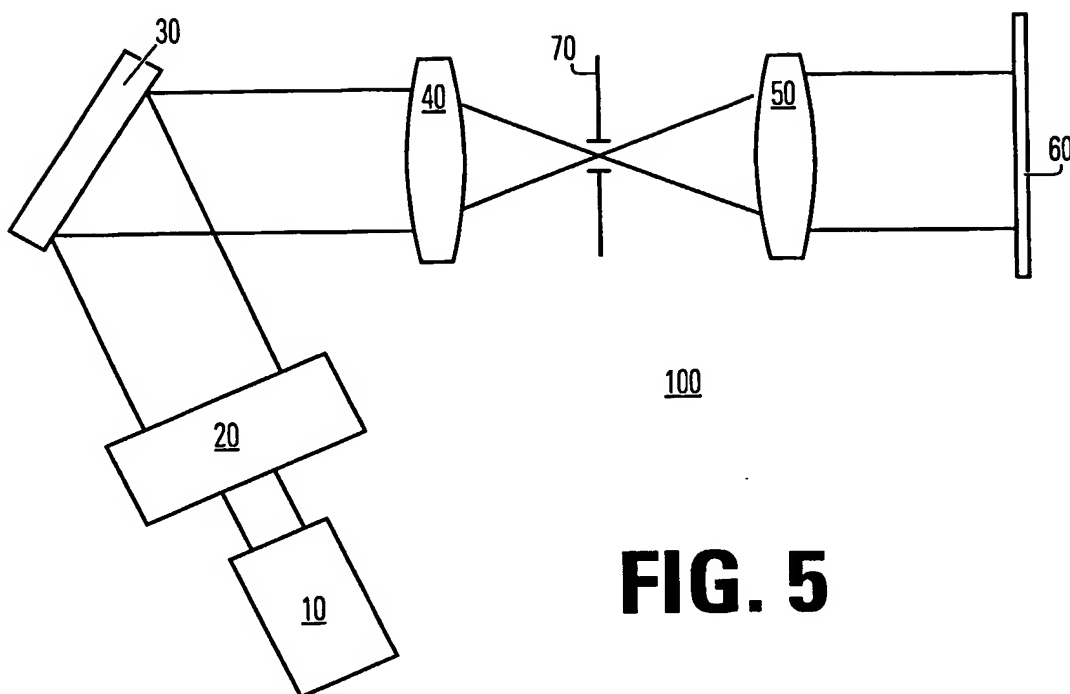
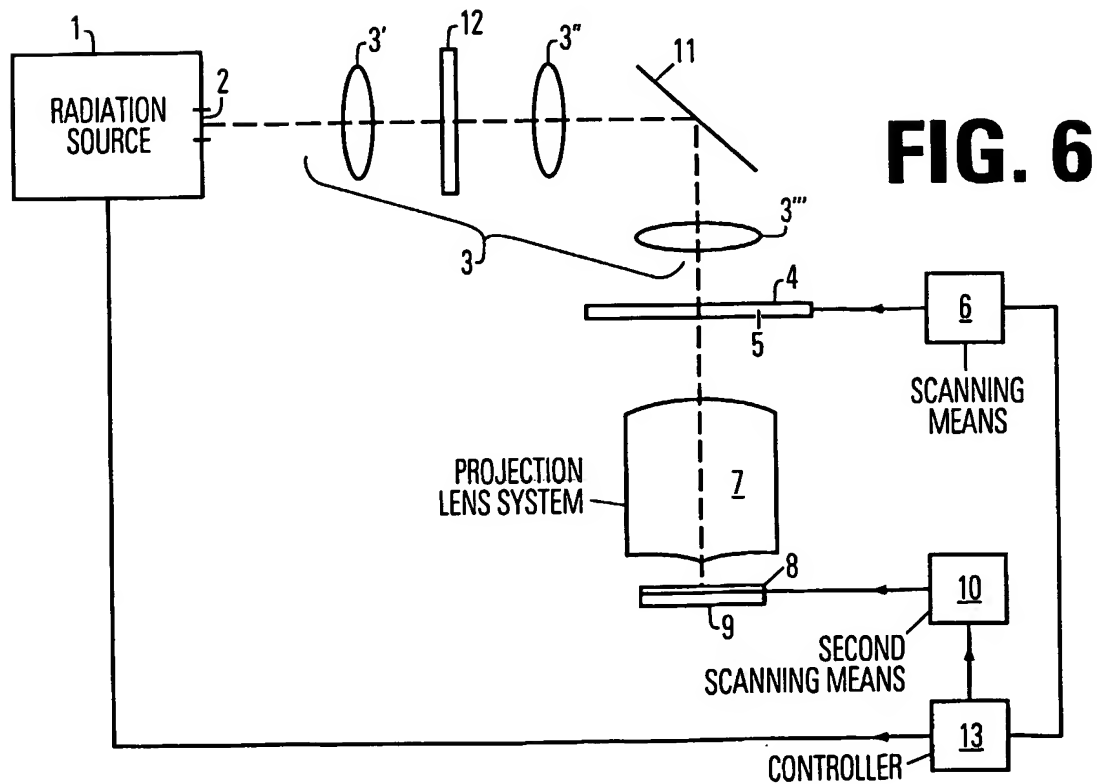
2/4

Wavelength	nm	248	248	248	248	193	193	193	193	157	157	157	157
Bandwidth	pm	0.2	0.4	0.8	1.6	0.2	0.4	0.8	1.6	0.2	0.4	0.8	1.6
No of pulses	Pulse length ns	Illumination variation (3 sigma)											
20	20	8.8%	6.2%	4.4%	3.1%	6.8%	4.8%	3.4%	2.4%	5.6%	3.9%	2.8%	2.0%
20	30	7.2%	5.1%	3.6%	2.5%	5.6%	3.9%	2.8%	2.0%	4.5%	3.2%	2.3%	1.6%
20	40	6.2%	4.4%	3.1%	2.2%	4.8%	3.4%	2.4%	1.7%	3.9%	2.8%	2.0%	1.4%
20	60	5.1%	3.6%	2.5%	1.8%	3.9%	2.8%	2.0%	1.4%	3.2%	2.3%	1.6%	1.1%
20	100	3.9%	2.8%	2.0%	1.4%	3.1%	2.2%	1.5%	1.1%	2.5%	1.8%	1.2%	0.9%
20	200	2.8%	2.0%	1.4%	1.0%	2.2%	1.5%	1.1%	0.8%	1.8%	1.2%	0.9%	0.6%
30	20	7.2%	5.1%	3.6%	2.5%	5.6%	3.9%	2.8%	2.0%	4.5%	3.2%	2.3%	1.6%
30	30	5.8%	4.1%	2.9%	2.1%	4.5%	3.2%	2.3%	1.6%	3.7%	2.6%	1.9%	1.3%
30	40	5.1%	3.6%	2.5%	1.8%	3.9%	2.8%	2.0%	1.4%	3.2%	2.3%	1.6%	1.1%
30	60	4.1%	2.9%	2.1%	1.5%	3.2%	2.3%	1.6%	1.1%	2.6%	1.9%	1.3%	0.9%
30	100	3.2%	2.3%	1.6%	1.1%	2.5%	1.8%	1.2%	0.9%	2.0%	1.4%	1.0%	0.7%
30	200	2.3%	1.6%	1.1%	0.8%	1.8%	1.2%	0.9%	0.6%	1.4%	1.0%	0.7%	0.5%
40	20	6.2%	4.4%	3.1%	2.2%	4.8%	3.4%	2.4%	1.7%	3.9%	2.8%	2.0%	1.4%
40	30	5.1%	3.6%	2.5%	1.8%	3.9%	2.8%	2.0%	1.4%	3.2%	2.3%	1.6%	1.1%
40	40	4.4%	3.1%	2.2%	1.6%	3.4%	2.4%	1.7%	1.2%	2.8%	2.0%	1.4%	1.0%
40	60	3.6%	2.5%	1.8%	1.3%	2.8%	2.0%	1.4%	1.0%	2.3%	1.6%	1.1%	0.8%
40	100	2.8%	2.0%	1.4%	1.0%	2.2%	1.5%	1.1%	0.8%	1.8%	1.2%	0.9%	0.6%
40	200	2.0%	1.4%	1.0%	0.7%	1.5%	1.1%	0.8%	0.5%	1.2%	0.9%	0.6%	0.4%
60	20	5.1%	3.6%	2.5%	1.8%	3.9%	2.8%	2.0%	1.4%	3.2%	2.3%	1.6%	1.1%
60	30	4.1%	2.9%	2.1%	1.5%	3.2%	2.3%	1.6%	1.1%	2.6%	1.9%	1.3%	0.9%
60	40	3.6%	2.5%	1.8%	1.3%	2.8%	2.0%	1.4%	1.0%	2.3%	1.6%	1.1%	0.8%
60	60	2.9%	2.1%	1.5%	1.0%	2.3%	1.6%	1.1%	0.8%	1.9%	1.3%	0.9%	0.7%
60	100	2.3%	1.6%	1.1%	0.8%	1.8%	1.2%	0.9%	0.6%	1.4%	1.0%	0.7%	0.5%
60	200	1.6%	1.1%	0.8%	0.6%	1.2%	0.9%	0.6%	0.4%	1.0%	0.7%	0.5%	0.4%
100	20	3.9%	2.8%	2.0%	1.4%	3.1%	2.2%	1.5%	1.1%	2.5%	1.8%	1.2%	0.9%
100	30	3.2%	2.3%	1.6%	1.1%	2.5%	1.8%	1.2%	0.9%	2.0%	1.4%	1.0%	0.7%
100	40	2.8%	2.0%	1.4%	1.0%	2.2%	1.5%	1.1%	0.8%	1.8%	1.2%	0.9%	0.6%
100	60	2.3%	1.6%	1.1%	0.8%	1.8%	1.2%	0.9%	0.6%	1.4%	1.0%	0.7%	0.5%
100	100	1.8%	1.2%	0.9%	0.6%	1.4%	1.0%	0.7%	0.5%	1.1%	0.8%	0.6%	0.4%
100	200	1.2%	0.9%	0.6%	0.4%	1.0%	0.7%	0.5%	0.3%	0.8%	0.6%	0.4%	0.3%
200	20	2.8%	2.0%	1.4%	1.0%	2.2%	1.5%	1.1%	0.8%	1.8%	1.2%	0.9%	0.6%
200	30	2.3%	1.6%	1.1%	0.8%	1.8%	1.2%	0.9%	0.8%	1.4%	1.0%	0.7%	0.5%
200	40	2.0%	1.4%	1.0%	0.7%	1.5%	1.1%	0.8%	0.5%	1.2%	0.9%	0.6%	0.4%
200	60	1.6%	1.1%	0.8%	0.6%	1.2%	0.9%	0.6%	0.4%	1.0%	0.7%	0.5%	0.4%
200	100	1.2%	0.9%	0.6%	0.4%	1.0%	0.7%	0.5%	0.3%	0.8%	0.6%	0.4%	0.3%
200	200	0.9%	0.6%	0.4%	0.3%	0.7%	0.5%	0.3%	0.2%	0.6%	0.4%	0.3%	0.2%

FIG. 3

Wavelength	nm	248	248	248	248	193	193	193	193	157	157	157	157
Pulse length	ns	10	20	30	40	10	20	30	40	10	20	30	40
Polarised	Bandwidth	Illumination variation (3 sigma)											
	ns												
Yes	1	24.8%	17.5%	14.3%	12.4%	19.3%	13.6%	11.1%	9.7%	15.7%	11.1%	9.1%	7.9%
Yes	10	7.8%	5.5%	4.5%	3.9%	6.1%	4.3%	3.5%	3.1%	5.0%	3.5%	2.9%	2.5%
Yes	14	6.6%	4.7%	3.8%	3.3%	5.2%	3.6%	3.0%	2.6%	4.2%	3.0%	2.4%	2.1%
Yes	20	5.5%	3.9%	3.2%	2.8%	4.3%	3.1%	2.5%	2.2%	3.5%	2.5%	2.0%	1.8%
Yes	30	4.5%	3.2%	2.6%	2.3%	3.5%	2.5%	2.0%	1.8%	2.9%	2.0%	1.7%	1.4%
Yes	40	3.9%	2.8%	2.3%	2.0%	3.1%	2.2%	1.8%	1.5%	2.5%	1.8%	1.4%	1.2%
Yes	50	3.5%	2.5%	2.0%	1.8%	2.7%	1.9%	1.6%	1.4%	2.2%	1.6%	1.3%	1.1%
Yes	100	2.5%	1.8%	1.4%	1.2%	1.9%	1.4%	1.1%	1.0%	1.6%	1.1%	0.9%	0.8%
No	1	24.8%	17.5%	14.3%	12.4%	19.3%	13.6%	11.1%	9.7%	15.7%	11.1%	9.1%	7.9%
No	10	7.8%	5.5%	4.5%	3.9%	6.1%	4.3%	3.5%	3.1%	5.0%	3.5%	2.9%	2.5%
No	14	6.6%	4.7%	3.8%	3.3%	5.2%	3.6%	3.0%	2.6%	4.2%	3.0%	2.4%	2.1%
No	20	5.5%	3.9%	3.2%	2.8%	4.3%	3.1%	2.5%	2.2%	3.5%	2.5%	2.0%	1.8%
No	30	4.5%	3.2%	2.6%	2.3%	3.5%	2.5%	2.0%	1.8%	2.9%	2.0%	1.7%	1.4%
No	40	3.9%	2.8%	2.3%	2.0%	3.1%	2.2%	1.8%	1.5%	2.5%	1.8%	1.4%	1.2%
No	50	3.5%	2.5%	2.0%	1.8%	2.7%	1.9%	1.6%	1.4%	2.2%	1.6%	1.3%	1.1%
No	100	2.5%	1.8%	1.4%	1.2%	1.9%	1.4%	1.1%	1.0%	1.6%	1.1%	0.9%	0.8%

FIG. 4

**FIG. 5****FIG. 6**